
I. *The Longitude of* Buenos Aires, *determin'd from an Observation made there by* Pere Feuillèe. By Edm. Halley LL. D. *Astronomer Royal*, and F.R.S.

I HAVE as Occasion offered, made it my Business to collect such Celestial Observations as might be of Use to determine the Longitudes of Places on the Sea coast of the World; in order to get as near as possible the Out-line, or true Figure of the Earth, without which our Geography of the Inlands must necessarily be very insufficient. The Memoirs of the Royal Academy of *Paris*, afford a good Number of Observations of this Kind, and among the rest, there is one made at *Buenos Aires* on the River of *Plate*, in the South *America*, by *Pere Feuillèe* in his Voyage to *Peru*: who, in the Memoirs for the Year 1711. is said to have observed at that Place on the 19th of *August*, 1708. the Immersion of the Star in the Southern Foot of *Virgo* (marked by *Bayer* with λ) behind the obscure Limb of the Moon. Being desirous to see what Longitude might be deduced from this

this Obſervation, I ſoon found that there was a Fault in the Day, and likewiſe in the Star; for that λ of *Virgo* was then nearly in 3 Degrees of *Scorpio*, and the Moon would not be there till the next Day, *Monday* the 20th of *Auguſt*; and the Latitude of λ being about half a Degree North, the Moon at that Longitude would be about 3 Degrees more Southerly than the Star, and conſequently far from Eclipſing it; for that at that time the deſcending Node was in the very Beginning of *Libra*. Hence I concluded it muſt be ſome other Star, that *Pere Feuillèe* obſerved Eclipſed by the Moon: The Day was certainly the 20th and not the 19th of *Auguſt*, as was evident by the Place of the Moon; but as to the Star, it was neither in the *Tychonick* Catalogue, nor yet in that more copious *Britiſh* Catalogue of Mr. *Flamſteed*; but turning over that of *Hevelius*, I found a Star whoſe Situation agreed well with the Obſervation, and was undoubtedly the Star that was ſeen to immerge behind the Moon: The Place Mr. *Hevelius* gives it, allowing the Preceſſion of the Equinox, was then ♏ 1° 56′¼ with South Latitude 2° 51′¼. It remained then for me to be aſſured of the Place of this Star, and accordingly on the 21ſt and 24th of *December* laſt, I got ſuch Obſervations by help of the circumjacent Stars, that I was aſſured the Place of the Star, (which is a fair Star, of the 5th Magnitude) was at that time, ♏ 1° 58′ 40″ with South Latitude 2° 54′¼, being above 2′ in Longitude, and 3′ in Latitude, more than *Hevelius* gives it. The Hour of this Occultation is ſet down preciſely 7h 5′ 38″ at *Buenos Aires*, the Latitude of the Place being 34° 35′ South. Whence the Altitude of the Moon there was then 42° 48′, and the Parallactick Angle 76° 38′, and the Parallax in Longitude 40′ 11″ to the *Weſt* and in

Latitude 9′ 33″ to the *North*. So the Moon's obſerved Place corrected by Parallax was ♏ 2° 28′ 4″ with South Latitude 2° 52′½. To this Place, by the *Calculus* of thoſe Numbers I have fitted to our Preſident's Theory of the Moon (but which would be improper and too long to be here recited) the Moon will be found to have arrived *Auguſt* the $\frac{2}{20}$ at 10^h 57′ 36″ apparent Time at *London*. But at *Buenos Aires* it was then computed but 7^h 5′ 38″, whence the difference of Longitude reſulting from this Obſervation is 3^h 52′ or 58 Degrees, by how much *Buenos Aires* is more Weſterly than *London*. I have twice repeated the Calculation to be ſure to avoid error, and by comparing my Chart of the Variation with the Longitude thus found, it appears that in this Caſe a Ship at Sea uſing thoſe Tables and that Chart, would by an Obſervation of this Occultation have fallen with greater exactneſs on the Coaſt of *America*, than by any Reckoning can be pretended to be done.